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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,679	08/29/2003	Kiyono Ikenaka	5341-16	9312

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EXAMINER

GOMA, TAWFIK A

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/651,679	<b>Applicant(s)</b> IKENAKA ET AL.	
	<b>Examiner</b> Tawfik Goma	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-100 is/are pending in the application.
- 4a) Of the above claim(s) 11, 15-44, 51-98 and 100 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-14, 45-50 and 99 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Election/Restrictions***

Applicant's election without traverse of Species A, claims 1-10, 12-14, 45-50 and 99 in the reply filed on 7/10/2006 is acknowledged.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 9-10, 12-14 and 45-50 are rejected under 35 U.S.C. 102(e) as being anticipated by Shiono et al (US 6834036).

Regarding claims 1, 45 and 99, Shiono discloses an optical pickup apparatus, comprising: a first light source to emit a light flux of a wavelength  $\lambda_1$  (col. 25 lines 56-63) for conducting recording and/or reproducing information for a first optical information recording medium having a protective substrate having a thickness  $t_1$  (col. 26 lines 6-15); a second light source to emit a light flux of a wavelength  $\lambda_2$  ( $\lambda_1 < \lambda_2$ ) (col. 26 lines 2-7,  $\lambda_3$ ) for conducting recording and/or

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reproducing information for a second optical information recording medium having a protective substrate having a thickness  $t_2$  ( $t_1 \geq t_2$ ) (col. 26 lines 4-7); a third light source to emit a light flux of a wavelength  $\lambda_3$  ( $\lambda_2 < \lambda_3$ ) (col. 25 lines 64-67) for conducting recording and/or reproducing information for a third optical information recording medium having a protective substrate having a thickness  $t_3$  ( $t_2 < t_3$ ) (col. 26 lines 1-2); an objective optical element into which an infinite parallel light flux comes when recording and/or reproducing information is conducted for the first, second and third optical information recording mediums (col. 6 lines 45-49); and a diffractive optical element located on a common optical path for the first, second and third light sources and having a diffractive structure (col. 6 lines 48-58); wherein a converged-light spot is formed on the first optical information recording medium with  $m$ -th order ( $m$  is a natural number) diffracted-light ray of the wavelength  $\lambda_1$  generated by the diffractive optical element (col. 26 lines 15-23), a converged-light spot is formed on the second optical information recording medium with  $n$ -th order ( $n$  is a natural number) diffracted-light ray of the wavelength  $\lambda_2$  generated by the diffractive optical element (col. 26 lines 27-31), and a converged-light spot is formed on the third optical information recording medium with  $k$ -th order ( $k$  is a natural number) diffracted-light ray of the wavelength  $\lambda_3$  generated by the diffractive optical element (col. 26 lines 23-27), and wherein one of  $m$ ,  $n$  and  $k$  is different from one of other two numbers (col. 26 lines 15-31).

Regarding claims 2 and 46, Shiono further discloses wherein the diffractive optical element is the objective optical element (col. 9 lines 42-44).

Regarding claim 3, Shiono further discloses wherein the diffractive optical element is a collimator (3, fig. 4 and col. 31 lines 13-18).

Regarding claims 4 and 50, Shiono further discloses wherein the diffractive optical element is an optical element provided separately from the objective optical element and a collimator (5, fig. 5 and 8, fig. 8 and col. 31 lines 13-18).

Regarding claim 5, Shiono further discloses a first compatible optical element located on a common optical path for the first, second and third light sources (col. 26 lines 47-67) and a second compatible optical element located on an optical path for only one of the first, second and third light sources or a common path for two light sources of the first, second and third light sources (8, 5a, fig. 6 and col. 31 lines 13-18), wherein the first compatible optical element has a first compatible function to form a converged-light spot necessary for recording and/or reproducing information for at least one of the first, second and third optical information recording mediums (col. 26 lines 47-67), and wherein the second compatible optical element has in combination with the first compatible optical element a second compatible function to form a converged-light spot necessary for recording and/or reproducing information for optical information recording mediums other than the at least one of the first, second and third optical information recording mediums (8, 18, 5a fig. 6 and col. 31 lines 13-18).

Regarding claim 6, Shiono further discloses wherein the first compatible optical element is the objective optical element (col. 26 lines 47-67 and 4, fig. 1).

Regarding claim 9, Shiono further discloses wherein the second compatible optical element is a diffractive optical element (8, fig. 6 and col. 12 line 1 and 18, fig. 6).

Regarding claim 10, Shiono further discloses wherein reproducing and/or recording information is conducted for an optical information recording medium in such a way that a light flux comes into an objective optical element so as to have an equal magnification for all of the first, second and third optical information recording mediums (4a, fig. 4), and the first and second compatible functions corrects a spherical aberration due to difference in wavelength and a spherical aberration due to difference in thickness among the optical information recording mediums (col. 31 lines 31-67 thru col. 32 lines 1-4).

Regarding claim 12, Shiono further discloses wherein  $m$  is 2 (col. 26 lines 24-27).

Regarding claim 13, Shiono further discloses wherein  $n$  is 1 (col. 11 lines 63-67 thru col. 12 lines 1-3). Shiono further discloses multiple combinations of orders of light used to optimize efficiency (figs. 12 and 13)

Regarding claim 14, Shiono further discloses an optical correcting structure to conduct temperature compensation and chromatic aberration compensation (col. 31 lines 36-54).

Regarding claim 47, Shiono further discloses wherein all of light fluxes of the wavelength  $\lambda_1$ ,  $\lambda_2$ , and  $\lambda_3$  come into the diffractive optical element as almost infinite parallel light flux (fig. 6 and col. Col. 26 lines 35-47).

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Regarding claims 48 and 49, Shiono further discloses wherein the diffractive optical element works as a collimator when the light flux of the wavelength  $\lambda_1$  or  $\lambda_2$  comes into (col. 16 lines 3-21 and col. 16 lines 56-67). Shiono discloses that the collimator lens collimates the light output by the light source 1 (which is either  $\lambda_1$  or  $\lambda_2$ ) and that the collimator lens can be formed integrally or separately from the diffractive element.

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiono et al (US 6834036) in view of Kitahara (US 6545823).

Regarding claims 7 and 8, Shiono discloses everything claimed as applied above. Shiono further discloses wherein the second compatible optical element is a beam splitter or the like (18, fig. 6 and col. 18 lines 51-56). Shiono fails to disclose wherein the wherein the second compatible optical element is a liquid crystal element and a dichroic filter. In the same field of endeavor, Kitahara discloses using a dichroic filter or a liquid crystal element in order to record using multiple wavelengths (col. 2 lines 1-5). It would have been obvious one of ordinary skill in the art at the time of the applicant's invention to modify the

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apparatus disclosed by Shiono by providing a liquid crystal element or a dichroic filter as the second optical element as taught by Kitahara. The rationale is as follows: One of ordinary skill in the art would have been motivated to provide a liquid crystal element or a dichroic filter as common alternatives of elements used during recording with multiple wavelengths of light in order to separate the multiple wavelengths during recording based on the recording medium used.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tawfik Goma whose telephone number is (571) 272-4206. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

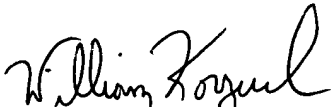


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



T. Goma  
9/19/2006



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